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NOTES ON  
TROPICAL AMERICAN ORCHIDS II

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IN THE COURSE of investigations on the orchids of Peru, the following reductions, discussions, amplifications and nomenclatorial notes were found to be advisable.

***Gomphichis plantaginifolia*** *C. Schweinfurth* *nom. nov.*

*Stenoptera plantaginea* Schlechter in Fedde Repert. 10 (1912) 446; ex Mansfeld in Fedde Repert. Beih. 58 (1930) t. 13, nr. 50.

*Gomphichis* (as *Gomphiches*) *plantaginea* Schlechter in Fedde Repert. Beih. 10 (1922) 60, non *G. plantaginea* Schlechter in Fedde Repert. Beih. 9 (1921) 50.

Since the epithet, *plantaginea*, is illegitimate as it had already been used in the genus *Gomphichis* at the time when *Stenoptera plantaginea* was referred to that genus, the above new name is proposed.

This species, which was originally described from Bolivian material, now appears to be frequent in Peru, where it occurs in the Departments of Ayacucho, Cuzco and Puno.

*Gomphichis plantaginifolia* differs from the Peruvian *G. plantaginea* in having a very densely flowered raceme and flowers with much narrower petals and dissimilar lip.

**Lanium microphyllum** (*Lindl.*) *Bentham* in Hooker Ic. Plant. 14 (1881) t. 1334—Cogniaux in Martius Fl. Bras. 3, pt. 5 (1898) 28.

*Epidendrum microphyllum* Lindley in Hooker Journ. Bot. 3 (1841) 85.

*Lanium peruvianum* Schlechter in Fedde Repert. Beih. 9 (1921) 97; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 123, nr. 481.

The superposed arrangement of the ovoid (not compressed) pollinia shows clearly that the concept *Lanium* is distinct from the genus *Epidendrum*.

Judging from the description and floral analysis of *Lanium peruvianum*, this concept is inseparable from the variable *L. microphyllum*.

**Epidendrum brachyphyllum** *Lindley* Fol. Orch. Epidendrum (1853) p. 72, no. 225.

*Epidendrum Lindenii* Lindley in Bot. Reg. 31 (1845) Misc. p. 48, no. 59; Fol. Orch. Epidendrum (1853) p. 72, no. 227, non *E. Lindenii* Lindley in Ann. & Mag. Nat. Hist. 12 (1843) 397.

*Epidendrum cuzcoense* Schlechter in Fedde Repert. Beih. 9 (1921) 82; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 117, nr. 460.

*Epidendrum tarmense* Schlechter in Fedde Repert. Beih. 9 (1921) 94; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 122, nr. 477.

*Epidendrum inconstans* Ames in Bull. Torr. Bot. Club 58 (1931) 350.

Judging from a record of the type of the Bolivian *Epidendrum brachyphyllum* bearing an analytical drawing from the Lindley Herbarium at Kew, this concept includes the *Epidendrum Lindenii* which Lindley described in the Botanical Register of 1845. The latter concept is represented in our herbarium by a photograph of the type

specimen and a flower from this collection as well as by a specimen (*Fendler 1452*) cited as *E. Lindenii* by Cogniaux (in Mart. Fl. Bras. 3, pt. 5 (1898) 132). In the Ames Herbarium are also a large number of South American collections which have been referred to *Epidendrum Lindenii* originating from Venezuela (the type locality), Colombia, Ecuador and Brazil.

*Epidendrum brachyphyllum* was described from a single small specimen about 15 cm. tall with rose-colored flowers. Its only notable difference from *E. Lindenii* is that the lateral divisions of the callus on the lip in *E. brachyphyllum* appear to be simple, whereas they are more or less bilobulate in *E. Lindenii*. The latter species seems to be very variable both vegetatively (in height, stature, width of leaves, etc.) and florally (in the width of the petals and in the degree of laceration of the lobes of the lip).

The Peruvian *Epidendrum cuzcoense* is a large species 1 to 2 meters tall with leaves about twice as large as those of *E. brachyphyllum* (but of about the same proportions) and slightly larger orange flowers. The petals are broad and similar to those of *E. brachyphyllum* and the callus of the lip seems to resemble that of *E. Lindenii*.

*Epidendrum tarmense*, also from Peru, is almost or quite as large a plant as *E. cuzcoense*. The flowers, which are brick-red are almost exactly the same size and form as those of *E. cuzcoense*, but the petals are somewhat narrower and the lobes of the lip of slightly different proportion.

*Epidendrum inconstans* was used by Ames to designate *E. Lindenii* (1845), since the latter epithet was a homonym of *E. Lindenii* (1843).

This variable and much collected species occurs widely in the northwestern parts of South America. The flowers range from golden yellow or orange to scarlet and

various shades of pink, and rarely maroon or white forms occur.

*Epidendrum xanthinum* Lindl. with yellow flowers is a species very closely allied to *E. brachyphyllum*, but it appears to have a dissimilar less distinctly lobed callus on the lip.

***Epidendrum catillus*** Reichenbach filius & Warscewicz in Bonpl. 2 (1854) 112.

*Epidendrum vinosum* Schlechter in Fedde Repert. Beih. 9 (1921) 96; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 122, nr. 480.

The Colombian *Epidendrum catillus*, which was described from a peduncled inflorescence only, is represented in the Ames Herbarium by several drawings (with analyses of the lip) from the Reichenbach Herbarium in Vienna. The mid-lobe of the lip is shown as subquadrate-obovate and apiculate as described; but the basal crenulate callus is depicted as scarcely exceeding the base of the mid-lobe whereas it is described as extending from the base to the apex of the mid-lobe.

In the Peruvian *E. vinosum*, of which I have seen several examples, the mid-lobe of the lip is ovate-lanceolate or "oblong-linguiform" (as described) and more or less abruptly acute. In these examples the crenulate callus is produced to about the middle of the mid-lobe or slightly above, whereas it is described and illustrated as scarcely produced above the base of the mid-lobe. In an Ecuadorian collection reasonably referred to *E. catillus*, however, the mid-lobe is rather subquadrate with a truncate and apiculate apex and thus appears to be of a form intermediate between *E. catillus* and *E. vinosum*.

As is characteristic of this group of *Epidendrum*s, there is considerable variation in the exact formation of the details of the lip. Accordingly, it seems advisable to include *E. vinosum* in the concept *E. catillus*.

**Epidendrum cornutum** Lindley in Hooker Journ. Bot. 3 (1841) 86; Fol. Orch. Epidendrum (1853) p. 48, no. 149.

*Epidendrum anthoceros* Linden & Reichenbach filius in Bonpl. 2 (1854) 281.

*Epidendrum Pavonianum* Reichenbach filius in Bonpl. 4 (1856) 215.

*Epidendrum melinoacron* Schlechter in Fedde Repert. Beih. 9 (1921) 88; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 119, nr. 468.

*Epidendrum anthoceros*, of which I have seen a drawing (with analysis of the lip) made from the type in the Reichenbach Herbarium in Vienna, appears closely to resemble *E. cornutum*, as represented by a photograph of the latter species (bearing an analytical drawing of the lip) from the Lindley Herbarium at Kew. It has leaves very similar to the more robust Colombian specimen of *E. cornutum* which was mounted on the same sheet with the type, but has a more elongate raceme than is shown by even the more slender type of *E. cornutum*. The only notable difference between these concepts, however, is that *E. anthoceros* is represented as having minutely denticulate acute lateral lobes of the lip, whereas those of *E. cornutum* are shown as entire and rounded at the apex. In *Weberbauer 6300*, previously identified as *E. anthoceros*, the lateral lobes are obscurely denticulate but rounded at the apex. Thus it appears reasonable to neglect these minute characters as of insufficient diagnostic weight.

*Epidendrum Pavonianum* Reichb.f., represented in the Ames Herbarium by a drawing (with analysis of the lip) from the Reichenbach Herbarium, appears to have somewhat shorter broader leaves than the otherwise similar *E. cornutum*. The lateral lobes of the lip, which are represented as entire and rounded, are described and shown as thickened inside the margins.

*Epidendrum melinoacron* is typified by *Weberbauer 6300*, which collection was, as stated above, formerly identified as *E. anthoceros* Lind. & Reichb.f. Like the latter concept, it has the rounded lateral lobes of the lip with denticulate margins and it resembles *E. Pavonianum* in having dorsally carinate sepals and centrally thickened lateral lobes of lip—characters which are not mentioned in either *E. cornutum* or in *E. anthoceros*.

Considering the evident variability of *E. cornutum* as interpreted by Lindley and the apparently obscure characters of the lateral lobes of the lip in the allied forms, it seems best to treat these concepts as variants of one polymorphic species.

***Epidendrum crassilabium*** *Poeppig & Endlicher* Nov. Gen. ac Sp. 2 (1838) 1, t. 102.

*Epidendrum variegatum* Hooker in Bot. Mag. 59 (1832) t. 3151, nec Sw. (1788) nec Koen. in Retzius (1791).

*Epidendrum saccharatum* Kränzlin in Orchis 2 (1908) 113, fig. 17.

It appears, from a careful study of the description of *E. saccharatum* from British Guiana, that this concept is referable to the extremely variable *E. crassilabium* which is more generally known as *E. variegatum*. Slight discrepancies occur in the elongate creeping rhizome, the somewhat broader leaves and the more elongate pedicellate ovaries attributed to *E. saccharatum*.

The full synonymy of this species is given in Ames, Hubbard & Schweinfurth The Genus *Epidendrum* in the United States and Middle America (1936) 85.

***Epidendrum cristatum*** *Ruiz & Pavon* Syst. Veg. (1798) 243.

*Epidendrum raniferum* Lindley Gen. & Sp. Orch. Pl. (1831) 109; Fol. Orch. *Epidendrum* (1853) p. 53, no. 167.

*Epidendrum validum* Schlechter in Fedde Repert. Beih. 9 (1921) 95; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 122, nr. 479.

An examination of typical material of the heretofore obscure species, *Epidendrum cristatum*, has convinced me of the identity of this concept with the widespread plant commonly known as *E. raniferum* Lindl. *E. cristatum* apparently does not differ from the usual forms of this variable concept except in having more deeply divided lateral divisions of the lip. These lateral lobes consist of four divisions of which the posterior one is obliquely ovate-lanceolate and the three anterior divisions linear, spreading and successively longer toward the front.

Full synonymy of *Epidendrum raniferum* is given in Ames, Hubbard & Schweinfurth The Genus Epidendrum in the United States and Middle America (1936) 166.

***Epidendrum densifolium*** Kränzlin in Fedde Repert. 1 (1905) 186.

There has recently come to hand a specimen which must be referred to *E. densifolium*. It agrees well with the type collection (of which I have seen an excellent photograph) except that the leaves appear to be slightly smaller and the inflorescence consists of a spreading panicle rather than of a "raceme" as described. The detached flower-cluster which appears in the type specimen is probably a branch of a panicle and shows a strongly fractiflex rachis, whereas the rachis of the branches of the panicle in my specimen are at most slightly so.

PERU: Department of Ayacucho, Prov. Huanta, mountains north-east of Huanta, on rocks in moist ravine, at 3100-3200 meters altitude, flowers greenish yellow, February 1-10, 1926, A. Weberbauer 7507.

***Epidendrum difforme*** Jacquin Enum. Pl. Carib. (1760) 29 and Select. Stirp. Am. (1763) 223, t. 136.

*Epidendrum apaganum* Mansfeld in Notizbl. Bot. Gart. & Mus. Berl. 10 (1928) 240.

The features which appear to distinguish *E. apaganum* from its allies are the robust growth, the oval-oblong emarginate leaves and certain features of the lamina of the lip notably the irregularly dentate outer sides of the lateral lobes and the entire obtuse terminal lobe.

The leaf-form shown by the type of *E. apaganum* coincides well with that illustrated for *E. difforme* in Jacquin Select. Stirp. Am. t. 136. Furthermore, a Peruvian collection (*Klug 0.5* from the Department of Loreto) has an exactly similar growth and even larger leaves than those of *E. apaganum* as well as a lip with precisely the measurements of that species; yet it has the lobing of the lip with the subentire sides and the transverse emarginate mid-lobe of typical *E. difforme*. Frequently the outer sides of the lateral lobes of *E. difforme* are somewhat dentate and the mid-lobe of this polymorphic species is sometimes simple and obtuse as shown in the instance of *E. apaganum*.

Considering the almost inconceivable variability of *E. difforme*, it appears wise not to recognize another questionable segregate in this immediate alliance.

For the full synonymy of *E. difforme*, reference should be made to Botanical Museum Leaflets Harvard University 2 (1934) 50–55.

***Epidendrum fimbriatum* HBK. var. rhomboglossum** (*Kränzln.*) *C. Schweinfurth* var. nov.

*Epidendrum rhomboglossum* Kränzlin in Engler Bot. Jahrb. 54, Beibl. 117 (1916) 28.

*Epidendrum integrilabium* Ames & Schweinfurth in Sched. Orch. 8 (1925) 46.

An examination of isotype material of *Epidendrum rhomboglossum* (Weberbauer 6734) in the Gray Herbar-

ium, in the Herbarium of the Field Museum and in the United States National Herbarium has convinced me that this concept has its only marked difference from the variable *E. fimbriatum* in the entire or subentire (not deeply fimbriate-dentate) margins of the lip. In addition, this concept sometimes has larger leaves (up to 5.85 cm. long), often has larger flowers (sepals up to 8 mm. long), and the more strongly ovate lip is in varying degree longer than broad. Although *E. rhomboglossum* was treated as a synonym of *E. fimbriatum* by Schlechter in his orchid flora of Peru (in Fedde Repert. Beih. 9 (1921) 147), it seems preferable to consider this entire-lipped form as a well-marked variety of *E. fimbriatum*.

This conclusion is strengthened by the fact that the Bolivian *Epidendrum integrilabium*, which was specifically separated from *E. fimbriatum* by the entire margins of the lip, is nearly identical with *E. rhomboglossum*. In *E. integrilabium* the lip tends to be ovate or rhombic-ovate rather than suborbicular in outline (as in *E. fimbriatum*), and thus approaches the lip of *E. rhomboglossum* which is more distinctly narrowed above the middle, or lanceolate-ovate.

**Epidendrum Friderici-Guilielmi** *Warszewicz & Reichenbach filius* in Bonpl. 2 (1854) 110; in Xen. Orch. 1 (1856) 158, t. 51—Cogniaux Dict. Ic. Orch. Epidendrum (1899) t. 12.

*Epidendrum Huacapistanae* Kränzlin in Fedde Repert. 1 (1905) 183.

Judging from the description and an excellent photograph of the type of *Epidendrum Huacapistanae* in the Ames Herbarium, it seems clear that this concept represents a small form of *E. Friderici-Guilielmi* as exemplified by a photograph of authentic material of that species (presumably from the Reichenbach Herbarium) and by a Bolivian collection, *Cardenas 1372*.

The leaves of *E. Friderici-Guilielmi* appear to range from oblong-elliptic to oblong-obovate and from 15 to 28 cm. long and as much as 8 cm. wide, while those of *E. Huacapistanae* are oblong-lanceolate or oblong-elliptic and up to 14 cm. long and 2.5 cm. wide. The raceme of *E. Huacapistanae* is also much shorter than that shown by *E. Friderici-Guilielmi*; but its floral segments, while markedly smaller than those of typical *E. Friderici-Guilielmi*, seem to be of almost exactly the same form, contour and color in the two concepts. Moreover, the two species were collected at nearly the same altitude. The Bolivian specimen referred to is a vegetatively large plant of quite the aspect and size of typical *E. Friderici-Guilielmi* but with budded flowers whose segments are intermediate in size between the two forms.

***Epidendrum frigidum*** *Linden ex Lindley* in Bot. Reg. 31 (1845) Misc. p. 76, no. 48; Lindley Fol. Orch. Epidendrum (1853) p. 89, no. 286.

*Epidendrum macrodonax* Schlechter in Fedde Repert. Beih. 9 (1921) 88; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 119, nr. 467.

A collection from Cuzco, Peru (*Herrera 2119*) is surely referable to the Venezuelan *Epidendrum frigidum* which is represented in the Ames Herbarium by a photograph of the type bearing an analytical drawing of the lip. It differs from this type, however, in having apparently larger flowers with a verrucose outer surface to the sepals—a character which is not mentioned in the type. The dorsal sepal, which is lanceolate-oblong, is about 11 mm. long and the obliquely lanceolate lateral sepals are about 12 mm. long.

The Peruvian *Epidendrum macrodonax* from Huánuco, which reaches a height of 3 meters, varies from the Herrera collection of *E. frigidum* only in having somewhat

smaller flowers (sepals 8 mm. long), broader (ovate-oblong) dorsal sepal and obtuse (not acute nor acuminate) lip.

This species occurs in Peru (Cuzco and Huánuco (type of *E. macrodonax*)), Venezuela (type of *E. frigidum*) and perhaps Colombia (Pasto).

***Epidendrum frigidum* Linden ex Lindley var. stenophyton** (Schltr.) C. Schweinfurth var. nov.

*Epidendrum stenophyton* Schlechter in Fedde Repert. Beih. 9 (1921) 93; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 121, nr. 476.

This concept differs from *E. frigidum* only in outward appearance. Its stems are either simple (as in *E. frigidum*) or branched and they are much more slender, having a diameter of 4 mm. or less across the leaf-sheaths, whereas those of *E. frigidum* are about 10 mm. across. The leaf-sheaths are finely verruculose in the variety, whereas they appear to be merely rugulose in *E. frigidum*. The leaves of var. *stenophyton* are small, being 5.6 cm. or less long and 8 mm. or less wide, whereas they are much larger in *E. frigidum*. The inflorescences of var. *stenophyton* are always abbreviated and usually (but not always) racemose, whereas in *E. frigidum* they are invariably paniculate with commonly elongate branches. The flowers of this concept are slightly smaller than in *E. frigidum* and they vary from greenish white (sometimes with a faint pink tinge) to pale yellow, whereas those of *E. frigidum* are pale rose-colored.

This variety is apparently well distributed in Peru, being found in Amazonas (type of *E. stenophyton*), Cuzco and Huánuco. It seems quite likely that the Jameson collection from Pasto (Colombia) cited as a form of *E. frigidum* by Lindley (Fol. Orch. Epidendrum p. 89) as "weak and racemose, not paniced," should be referred to this variety.

***Epidendrum geminiflorum*** *Humboldt, Bonpland & Kunth* Nov. Gen. et Sp. 1 (1816) 354—Lindley Fol. Orch. Epidendrum (1853) p. 49, no. 155.

*Epidendrum cajamarcae* Schlechter in Fedde Repert. Beih. 9 (1921) 81; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 117, nr. 459.

After careful comparison of the type description of *E. geminiflorum*, supplemented by photographic records of collections in the Lindley Herbarium identified as representing that species, with the description and floral analysis of *E. cajamarcae*, it is my opinion that the two concepts are synonymous and that Kränzlin was correct in so identifying *Weberbauer 4102* (the type of *E. cajamarcae* Schltr.).

An Ecuadorian collection (attributed to *E. geminiflorum* by Lindley) on the same sheet with apparently topotype material of that species from Popayan (Colombia) has the slightly larger flowers with less acuminate sepals and petals specified for *E. cajamarcae*. It seems highly probable that the more acuminate character of the sepals in *E. geminiflorum* may be largely due to their revolute nature. Otherwise the discrepancies between the concepts appear to be unimportant, all the more so in comparing the lip of *E. geminiflorum* as drawn by Lindley with that of *E. cajamarcae* as depicted by Schlechter.

***Epidendrum Hartwegii*** *Lindley* in Bentham Pl. Hartweg. (1844) 150; Fol. Orch. Epidendrum (1853) p. 36, no. 113.

*Epidendrum fuscum* Schlechter in Fedde Repert. Beih. 9 (1921) 84; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 118, nr. 463.

Judging from the description and a floral analysis of *Epidendrum fuscum* made under the direction of Dr. Schlechter, this species cannot reasonably be separated

from *E. Hartwegii*. I have seen a drawing of the flower of the latter species traced from Lindley's sketch on the type sheet, as well as specimens from Venezuela and Colombia identified as *E. Hartwegii*.

The Peruvian collections which I identify as representing *E. Hartwegii* differ from the more carefully described *E. fuscum* in having somewhat larger vegetative proportions throughout. The plant, which shows a creeping rhizome, averages about 30 cm. high from the rhizome. The pseudobulbs range from 9.5 to 17 cm. (instead of 6.5–8 cm.) tall; the leaves vary from 15 to 20 cm. (instead of 10–14 cm.) long and 1.2–2.2 cm. wide. One raceme appears to have about fourteen (instead of six to nine) flowers. The floral outline and measurements, however, seem to be nearly identical with those of *E. fuscum*.

***Epidendrum ibaguense*** (as *ybaguense*) *Humboldt, Bonpland & Kunth* Nov. Gen. et Sp. Pl. 1 (1816) 352.

*Epidendrum radicans* Pavon ex Lindley Gen. & Sp. Orch. Pl. (1831) 104; Fol. Orch. Epidendrum (1853) 70, no. 220.

*Epidendrum decipiens* Lindley Fol. Orch. Epidendrum (1853) 70, no. 221.

*Epidendrum chrysostomum* Reichenbach filius in Allgem. Gartenz. 24 (1856) 98.

*Epidendrum laetum* Schlechter in Fedde Repert. Beih. 6 (1919) 37; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 5, nr. 19.

*Epidendrum Baumannianum* Schlechter in Fedde Repert. Beih. 7 (1920) 126; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 44, nr. 169.

*Epidendrum fraternum* Schlechter in Fedde Repert. Beih. 7 (1920) 133; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 47, nr. 180.

*Epidendrum Smithii* Schlechter in Fedde Repert. Beih.

7 (1920) 149; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 53, nr. 203.

*Epidendrum sororium* Schlechter in Fedde Repert. Beih. 7 (1920) 150; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 53, nr. 204.

*Epidendrum huanucoense* Schlechter in Fedde Repert. Beih. 9 (1921) 86; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 118, nr. 465.

A flower which was recently loaned to me from the type of the Colombian *Epidendrum ibaguense* and a photograph of that species from the Muséum d'Histoire Naturelle in Paris show that it is synonymous with *E. radicans* as represented by a photograph of the type specimen from the British Museum of Natural History in London, and by numerous specimens in the Ames Herbarium from Mexico and Central America. The only notable difference between the concepts is that *E. radicans* generally has long whitish roots proceeding from the stem (commonly opposite the leaf-joints), whereas in *E. ibaguense* no such roots appear. Furthermore, some specimens of *E. radicans* are apparently destitute of these roots. It appears, moreover, that many examples of *E. radicans* have petals which are broader than the sepals, rather than narrower, but this character is variable and not typical of the species. Both concepts have orange to vermilion flowers. For the synonymy of *E. radicans*, see Ames, Hubbard & Schweinfurth The Genus *Epidendrum* in the United States and Middle America (1936) 162.

Judging from a photograph of the type and co-type of *Epidendrum decipiens* in the Ames Herbarium, this concept also cannot reasonably be separated from *E. ibaguense*. This South American species also has orange flowers.

In the drawing of the Peruvian *Epidendrum chrysostomum* from the Reichenbach Herbarium in Vienna, the

lateral lobes of the lip are represented as obliquely and broadly subquadrate from a cordate base. Therefore, they seem to be quite similar to those of typical *E. ibaguense* even though these structures are described as ligulate. The leaves are said to exceed 10 cm. in length, whereas they are represented in the drawing as 6 cm. or less long (like the leaves shown in *E. ibaguense* and *E. radicans*). As figured, the flowers appear to be of approximately the size and quite the same form as those of *E. ibaguense*, and are described as dark garnet-red with a yellow lip.

The Venezuelan *Epidendrum laetum*, of which I have seen a drawing and analysis of the type (made under the supervision of Dr. Schlechter), seems to be very close to typical *E. ibaguense* but with slightly larger bright purple flowers. The lateral lobes of the lip are coarsely incised-dentate like those of the co-type of *E. decipiens* from British Guiana. The claw of the mid-lobe is rather short, yet distinct.

The Colombian *E. Baumannianum*, represented also by a floral analysis made under the supervision of Schlechter, appears to be inseparable from *E. ibaguense*. The leaves are somewhat larger, but the flowers (of which there are no color-notes) are almost identical with that species save that the sepals and petals are subobtuse and not acute nor acuminate.

*Epidendrum fraternum* from Colombia, illustrated by a floral analysis made under the supervision of Schlechter, is a small-leaved species having nearly the same floral segments as some forms of *E. radicans*. The lip which is rather shorter than that of *E. ibaguense* has lacerate-dentate lateral lobes and the short subquadrate mid-lobe is little dilated at the apex. The presence of even this short claw on the mid-lobe inclines me to place this concept as a synonym of *E. ibaguense* rather than of its variety *confluens*. No color notes are given.

The Colombian *Epidendrum Smithii* (represented by a photograph of typical material, a flower from the type and a floral analysis by Schlechter), is morphologically inseparable from typical *E. ibaguense*, but has much smaller bright rose-purple flowers.

*Epidendrum sororium*, also from Colombia and represented in the Ames Herbarium by a floral analysis made by Schlechter, is a species with small leaves and rather small flowers. The petals which are lanceolate-elliptic and the lip which has a subquadrate mid-lobe with only a slight apical dilation, are very similar to those of many specimens of the variable *E. radicans*.

*Epidendrum huanucoense*, from Peru, is described as a tall plant (about 150 cm. high) but has small rose-colored flowers of almost exactly the same size and form as those of *E. Filomenoi*. Indeed the single notable difference between these species is that the mid-lobe of the lip appears to have an abbreviated claw or isthmus which places it as a synonym of *E. ibaguense* rather than of var. *confluens*.

***Epidendrum ibaguense* HBK. var. *confluens***  
(Lindl.) C. Schweinfurth var. nov.

*Epidendrum fulgens* Brongniart in Duperr. Voy. Coquille Bot. Phan. (1834) 196, t. 43—Cogniaux in Martius Fl. Bras. 3, pt. 5 (1898) 121.

*Epidendrum Schomburgkii* Lindl. var. *confluens* Lindley Fol. Orch. Epidendrum (1853) p. 70, sub no. 219.

*Epidendrum calanthum* Reichenbach filius & Warscewicz in Bonpl. 2 (1854) 111.

*Epidendrum paytense* Reichenbach filius in Bonpl. 3 (1855) 220.

*Epidendrum pristis* Reichenbach filius in Gard. Chron. n.s. 26 (1886) 262.

*Epidendrum caucae* Schlechter in Fedde Repert. Beih.

7 (1920) 127; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 45, nr. 171.

*Epidendrum Filomenoi* Schlechter in Fedde Repert. Beih. 9 (1921) 83; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 117, nr. 461.

This variety is separated from the species by the sessile or indistinctly clawed mid-lobe of the lip which varies in size in relation to the lateral lobes.

*Epidendrum fulgens* (from Brazil, British Guiana and Trinidad) has brilliant purple flowers which are a little larger than in typical *E. ibaguense*. The petals are broadly oblong-elliptic to obovate and more or less entire; the lip has broadly rounded denticulate lateral lobes and a much smaller cuneate-retuse denticulate mid-lobe. Its proportions appear to be variable.

*Epidendrum Schomburgkii* var. *confluens* is a combination made by Lindley to represent *E. fulgens* Brongn. which he thought to be a variant of *E. Schomburgkii*. Being the first varietal designation of this alliance, the epithet must be conserved.

The type of *Epidendrum calanthum* was described from only the upper part of a plant consisting of two more or less branched inflorescences with their flowers. In the sketch of this concept from the Reichenbach Herbarium in Vienna, the sepals and petals, which are described as oblong and acute, appear to be closely similar to those of *E. ibaguense*. The sessile mid-lobe of the lip is obcordate and seems to be at least equally large with the lateral lobes. No notes of color are cited. Originally described from Peru, this concept occurs on the island of Guadeloupe and in Colombia. The latter collection (*Lehmann 8177*) differs from the type in having elliptic or oblong-elliptic petals and a prominently arcuate column.

The Peruvian *Epidendrum paytense*, exemplified in the Ames Herbarium by several drawings from the

Reichenbach Herbarium, is apparently a similar species with oblong-ovate to oblong leaves which are described as cartilaginous-denticulate on the margin (a character which is more or less marked in all specimens of this alliance which I have examined). The sepals are shown as elliptic-lanceolate and the petals which are described as broader than the sepals, are lanceolate-elliptic or "cuneate-rhombic" and minutely denticulate above. The lip appears to be very similar to that of *E. calanthum* except that the rounded lobules of the mid-lobe are described and sometimes shown as overlapping. The color is noted as vermilion, the lip being yellow and vermilion (or yellow with few dark purple spots).

*Epidendrum pristis*, described from a cultivated specimen of uncertain origin, is a slender plant with leaves minutely serrate. The drawing of an expanded flower, from the Reichenbach Herbarium, shows vermilion elliptic-lanceolate sepals and petals, the latter being serrate above. The yellow vermilion-spotted lip has semiorbicular irregularly dentate lateral lobes and a smaller cuneate retuse mid-lobe. It appears to be very similar in form to the lip of *E. fulgens* Brongn.

The Colombian *Epidendrum caucae*, represented in the Ames Herbarium by a floral analysis made by Schlechter, is a tall plant with adventitious roots as in *E. radicans*, small leaves and orange flowers which are slightly larger than in typical *E. ibaguense* and very similar to those of *E. fulgens*. The elliptic petals have slightly crenulate upper margins. The lip has an outline very similar to that of *E. fulgens* with a mid-lobe which is relatively small and cuneate-flabellate.

*Epidendrum Filomenoi*, from Peru, is described as a small plant up to 20 cm. high, with small rose-colored flowers. The petals, which are elliptic-oblong and narrower than the sepals, have crenulate or erose margins.

The lip has a form very similar to that represented for the lip of *E. calanthum*. Among several Peruvian specimens referable to this form, one plant is over 69 cm. high (stem incomplete) with broadly elliptic-oblong leaves up to 8 cm. long and 2.75 cm. wide. Other collections have small ovate or narrow lanceolate-oblong leaves. In some cases, the lamina of the lip appears to be irregularly deep-lacerate or lacerate on one side and lobed on the other, rather than distinctly 3-lobed.

***Epidendrum ibaguense* HBK. var. *Schomburgkii* (Lindl.) C. Schweinfurth var. nov.**

*Epidendrum Schomburgkii* Lindley in Bot. Reg. 24 (1838) Misc. p. 15, no. 16 & t. 53; Fol. Orch. Epidendrum (1853) p. 70, no. 219—Cogniaux in Martius Fl. Bras. 3, pt. 5 (1898) 120.

*Epidendrum fulgens* Focke in Tijdschr. Nat. Wetensch. 4 (1851) 66, non *E. fulgens* Brongn.

*Epidendrum splendens* Schlechter in Fedde Repert. Beih. 9 (1921) 93; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 121, nr. 475.

This variety differs from the species in the prominently acute or apiculate termination of the mid-lobe of the lip and in the acuminate or subacuminate sepals and petals. The flowers are commonly distinctly larger than in the other forms of this variable group.

A flower preserved on the type sheet of *Epidendrum Schomburgkii* in the Lindley Herbarium shows sepals and petals which are strongly acuminate and a mid-lobe of the lip which is acute or apiculate (described as triangular at the apex). The flowers appear to be somewhat larger than those of typical *E. ibaguense* and they show considerable variation in size. The color of the flowers is said to be scarlet or vermilion.

The Peruvian *Epidendrum splendens* appears to differ

from *E. Schomburgkii* only in its larger flowers. Its sepals are described as about 2.7 cm. long, whereas those of the type of *E. Schomburgkii* measure 1.5 cm. in length. However, other specimens have sepals up to 3 cm. long, and in one Peruvian collection (*Killip & Smith 29181*) referred to *E. Schomburgkii* the petals, which slightly exceed the sepals, are about 3.3 cm. long. The dilated apex of the mid-lobe of *E. splendens* is described and figured as transversely oval, as is the case in some flowers depicted in the plate of typical *E. Schomburgkii*.

In my opinion, *Epidendrum ibaguense* is a highly polymorphic species extending from Mexico through Central America and the West Indies to Brazil, Bolivia and Peru.

Two closely allied species which are perhaps referable to this group are *Epidendrum cinnabarinum* Salzm. and the rather indefinite *E. Mosenii* Reichb. f.

***Epidendrum inamoenum*** *Kränzlin* in Engler Bot. Jahrb. 37 (1906) 525.

A collection which I have recently received from the Field Museum (No. 1051139) is undoubtedly referable to this species of which I have seen an excellent photograph of the type. The discrepancies are so noticeable, however, that it seems worthwhile to record them.

Plant (lacking basal portion of stem) noted as 1 meter high; the type is about 18.5 cm. in height. Leaves up to 8 cm. long and 1.7 cm. wide; the typical blades given as up to 4 cm. long and 1.2 cm. wide. Inflorescence prominently recurved and about 9-flowered; the typical inflorescence is erect or slightly arcuate and only 4- to 5-flowered. Dorsal sepal broadly elliptic, about 11 mm. long and 5.4 mm. wide. Lateral sepals obliquely ovate-elliptic, about 12.2 mm. long and 6 mm. wide; the sepals of the type are described as oblong, 9-10 mm. long and 4 mm. wide. Petals oblanceolate, about 10 mm.

long and 3.6 mm. wide; those of the type cited as oblong, 7–8 mm. long and 3 mm. wide. Lip transversely broad-ovate, about 7.7 mm. long and 10.5 mm. wide; that of the type described as transversely oblong, 7 mm. long, 5–6 mm. broad. There do not appear to be any distinct basal calli in this specimen, while the type is noted as having two basal calli adnate to the column.

PERU: Apurimac, Prov. Andahuaylas, ravine north of Chincheros, at 2800 meters altitude, on shrubby hillside in a mixture of clay and gravel, February 27, 1939, *H. E. Stork & O. B. Horton 10756*.

***Epidendrum micranthum*** *Lindley* in *Hook. Journ. Bot.* 3 (1841) 88; *Fol. Orch. Epidendrum* (1853) p. 89, no. 283.

*Amblostoma holochilum* *Schlechter* in *Fedde Repert.* 10 (1912) 387; ex *Mansfeld* in *Fedde Repert. Beih.* 58 (1930) t. 40, nr. 158.

In the description as well as in the floral analysis drawn on the sheet of typical *Epidendrum micranthum*, the lip is oblong-quadrate or subquadrate-ovate and naked on the disc. Several Peruvian collections which I have seen recently are obviously inseparable from this species, but have lips which vary from oblong-cordate to rotundate-cordate and are more or less irregularly lobulate, especially in the lower part.

It is evident that the concept described and figured as *Amblostoma holochilum* should not be referred to that genus which is characterized by having subglobose pollinia and a deeply trifold lip. The strongly flattened pollinia place it unmistakably in *Epidendrum*.

The general aspect and closely similar form and proportions of *Amblostoma holochilum* show that this concept should be included in *Epidendrum micranthum*. Indeed, the only noteworthy discrepancies are that the apex of the lip is lightly retuse and the disc bears a trilobulate

callus—characters which appear, to a more or less marked degree, in some of the Peruvian specimens which are referable to *E. micranthum*.

***Epidendrum moyobambae*** *Kränzlin* in Fedde Repert. 1 (1905) 185.

*Epidendrum subpatens* Schlechter in Fedde Repert. Beih. 17 (1922) 40; ex Mansfeld in Fedde Repert. Beih. 59, 2 (1931) t. 56, nr. 223.

*Epidendrum benignum* Ames in Sched. Orch. 2 (1923) 26.

*Epidendrum amazonicum* Schlechter in Beih. Bot. Centralbl. 42, Abt. 2 (1925) 78.

An excellent photograph of the type of the Peruvian *Epidendrum moyobambae*, together with the description, shows that it includes the concepts heretofore represented by the Central American *E. subpatens* Schltr. and *E. benignum* Ames. At most there are very slight differences in measurements, but none in form.

*Epidendrum amazonicum* is said to have erect-spreading or subspreading racemes, whereas they vary from subspreading to pendent in the other forms of this concept: otherwise the plant is nearly identical.

It is evident that *Epidendrum patens* Sw. differs widely from all forms of *E. moyobambae* because of its paniculate inflorescences and much smaller flowers. These characters are well set forth by Fawcett & Rendle (Fl. Jam. 1 (1910) 89).

This species extends from Guatemala (?), through Costa Rica and Panama to Trinidad, Colombia, Brazil and Peru.

***Epidendrum nephroglossum*** *Schlechter* in Fedde Repert. Beih. 9 (1921) 89; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 119, nr. 469.

Since the original description of *E. nephroglossum* is

quite misleading when compared with a photograph of the type, with the floral analysis above cited, and with several Peruvian collections referable to this species, it seems desirable to correct the original diagnosis.

Plant epiphytic, variable. Roots fibrous, stout (not filiform), elongate. Stems loosely branching, up to more than 1 meter long according to collector's notes, ascending or arcuate (apparently not suberect as stated), entirely concealed by tubular sheaths which are scarious leafless and evanescent in the lower portions and leaf-bearing above. Leaves three to five in groups, distichous, more or less congested at the summit of the stem or on the short lateral branches, elliptic or oblong-elliptic to oblong-lanceolate (not ligulate), acute to subobtuse, up to 11.8 cm. long and 2.6 cm. wide, clasping at the base. Inflorescence racemose, at first more or less erect, becoming flexuous or pendent in anthesis, up to 13- (not 6-8) flowered, rather loose. Floral bracts ovate or ovate-lanceolate (not elliptic). Flowers green or greenish white to yellow. Dorsal sepal ovate-elliptic (not oblong), up to 1.8 (not 1.1) cm. long and 7.5 mm. wide, acute (not acuminate). Lateral sepals obliquely ovate-lanceolate, rarely elliptic-lanceolate (not oblong), acuminate, up to 2 (not 1.25) cm. long and 9 mm. wide, commonly with a conspicuous dorsal keel. Petals distinctly shorter than the dorsal sepal (not subequal), acute or subacute (not short-acuminate). Lamina of lip suborbicular-cordate to reniform, lightly (not sharply) retuse, up to 9 mm. long in the middle and 1.5 cm. wide.

This species is apparently rather widely distributed in Peru, being recorded from the Departments of Apurímac, Huancavelica, Huánuco and Junín (type), at altitudes ranging from 800 to 3100 meters.

**Epidendrum nocturnum** *Jacquin* var. **minus**  
*Cogniaux* in Bull. Soc. Roy. Bot. Belg. 43 (1906) 323.

*Epidendrum longicolle* Lindley in Bot. Reg. 24 (1838) Misc. p. 34, no. 49; Fol. Orch. Epidendrum (1853) p. 81, no. 255—Hooker in Bot. Mag. 71 (1845) t. 4165. *Epidendrum oliganthum* Schlechter in Fedde Repert. Beih. 9 (1921) 90; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 120, nr. 470.

*Epidendrum nocturnum* Jacq. var. *minor* Schlechter in Fedde Repert. Beih. 27 (1924) 69, probably.

On the sheet in Lindley's Herbarium bearing the type of *Epidendrum longicolle* from British Guiana are specimens from Brazil (San Gabriel, *Spruce 2391*) which have slightly broader (narrowly elliptic-oblong) leaves and smaller flowers than those of the type. All of these have been considered not only by Lindley but subsequently by Cogniaux (in Mart. Fl. Bras. 3, pt. 5 (1898) 134) to represent *E. longicolle* and appear to be a good match for Cogniaux' *E. nocturnum* var. *minus* from Peru.

The character and measurements given for *E. nocturnum* Jacq. var. *minus* also correspond surprisingly well with those of the concept called *E. oliganthum* Schltr., concerning which the author says (in Fedde Repert. Beih. 9 (1921) 90): "Im Habitus erinnert die Art am meisten an *E. nocturnum* L., doch sind die Blüten kaum grösser als bei *E. longicolle* Ldl."

Although no measurements are cited for the Colombian *E. nocturnum* var. *minor* Schltr. (l.c.) and hence no positive means of identification is given, there appears to be little doubt that this form also represents the variety *minus* Cogn.

It therefore seems advisable to treat all these small, slender, narrow-leaved plants with small flowers (all of varying proportions) as representing the var. *minus* of the widely variable *E. nocturnum*.

**Epidendrum Porpax** *Reichenbach filius* in Bonpl. 3 (1855) 220, non 1865.

*Epidendrum Matthewsii* Reichenbach filius in Gard. Chron. n.s. 26 (1886) 458 and ser. 3, 2 (1887) 431.

*Epidendrum gnomus* Schlechter in Fedde Repert. Beih. 9 (1921) 85; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 142, nr. 558.

*Epidendrum Matthewsii* has already been reduced to the synonymy of *E. Porpax* by Ames, Hubbard & Schweinfurth (The Genus *Epidendrum* in the United States and Middle America (1936) 152).

On the basis of the description of *E. gnomus* amplified by a floral analysis made under the supervision of Dr. Schlechter, it appears certain that this concept is referable to *E. Porpax* Reichb.f. (1855) which is represented in the Ames Herbarium by a photograph with floral drawings from the Reichenbach Herbarium, as well as by numerous collections extending from Mexico to Venezuela. Apparently this same conclusion was formerly reached by Kränzlin.

There appears to be no morphological difference between these species, the only discrepancy being that *E. gnomus* is smaller vegetatively than the usual plants of *E. Porpax*. However, the latter concept seems to be very variable in size of stem and leaves, and the characterization of *E. gnomus* agrees well with some portions of typical *E. Matthewsii* from Peru.

***Epidendrum Ruizianum*** Steudel Nomencl. Bot. ed. 2, pt. 1 (1840) 558.

*Epidendrum nutans* Ruiz & Pavon Syst. Veg. (1798) 245, non Swartz 1788.

*Epidendrum spathaceum* Lindley in Hooker Journ. Bot. 3 (1841) 85; Fol. Orch. *Epidendrum* (1853) p. 53, no. 166.

A photograph of the type of *Epidendrum nutans* Ruiz & Pav. (later renamed *E. Ruizianum* Steud.) shows that

it includes the concept which Lindley described as *E. spathaceum* from fragments "obtained by Mr. Mathews out of the herbarium of Ruiz and Pavon, preserved at Lima." The only difference between these two species appears to be that in *E. spathaceum* there is no indication of leaves, whereas in *E. nutans* Ruiz & Pav. there are oblong-lanceolate or elliptic-oblong obtuse leaves which are 14.5 to more than 16 cm. long and 3-3.5 cm. wide.

A Venezuelan specimen from Merida (*Alfredo Jahn 984*), which represents this species, bears similar leaves up to 23 cm. long and 3.3 cm. wide.

*Epidendrum Ruizianum* is thus recorded from Venezuela, Colombia and Peru (type).

***Epidendrum scabrum* Ruiz & Pavon** Syst. Veg. (1798) 248—Lindley Fol. Orch. Epidendrum (1853) p. 85, no. 271—Reichenbach filius in Bonpl. 4 (1856) 215—Cogniaux in Martius Fl. Bras. 3, pt. 5 (1898) 106.

*Epidendrum scabrum* Ruiz & Pav. var. *parviflorum* Cogniaux in Martius Fl. Bras. 3, pt. 5 (1898) 107.

*Epidendrum loxense* Lehmann & Kränzlin in Engler Bot. Jahrb. 26 (1899) 469.

*Epidendrum cardiophyllum* Kränzlin in Engler Bot. Jahrb. 37 (1906) 523.

The original description of *Epidendrum scabrum* is very brief and inadequate, merely saying: "E. foliis ovato-lanceolatis, marginibus vaginisque scabris, racemo terminali, nectarii labio cruciformi."

Fortunately, however, there is in the Ames Herbarium a photograph of the type of *E. scabrum* from the Madrid Herbarium which shows the following characters. Stem (incomplete below) stout, leafy, apparently densely pustulose. Leaves numerous, distichous, horizontally spreading, with the internodes about 2 cm. long; lamina ovate-lanceolate or ovate-oblong, acute or short-acuminate, clasping at the broadly rounded base, up to 4.3 cm. long

and 1.3 cm. wide. Inflorescence terminal, shortly peduncled, recurved, loosely paniculate with three subparallel branches which are subdensely many-flowered. Floral bracts lanceolate, acuminate, ascending, apparently much shorter than the slender pedicellate ovary. The only flower which is distinctly shown reveals an oblong, acute dorsal sepal about 8.5 mm. long and an apparently shorter lateral sepal which is obliquely oblong-obovate, acute and basally adnate to the column. A suggestion of a cuneate-spatulate petal is indicated, but no distinct outline of the lip is shown.

The Ecuadorian *Epidendrum loxense*, of which I have seen a specimen of the type number, has pustulose leaf-sheaths, but differs from *E. scabrum* in having smaller ovate leaves up to 2.4 cm. long and 1.3 cm. wide at intervals of 1.5 cm. or less. The inflorescence, which is either racemose or paniculate, has flowers with an oblong-elliptic dorsal sepal about 8.9 mm. long and obliquely oblong-obovate lateral sepals that seem to be exactly similar to the one shown in the photograph of *E. scabrum*. The petals when flattened out are cuneate-spatulate. The lamina of the lip has obliquely rounded lateral lobes and a larger subquadrate mid-lobe with a truncate apex which is slightly retuse and apiculate. In outline this latter organ might well be called cruciform.

The Peruvian *Epidendrum cardiophyllum*, which is represented in the Ames Herbarium by a photograph of the type, has scabrous leaf-sheaths and ovate leaves up to 4 cm. long and 1.85 cm. wide, at intervals of about 2.5 cm. The paniculate inflorescence shows flowers with sepals similar to those of *E. loxense* and about 8 mm. long. The petals appear to be linear-spatulate. The lip is described as having orbicular lateral lobes and a subequally large mid-lobe which is broadly oblong and retuse-apiculate.

In one Peruvian collection (*Weberbauer 6828*) referable to *E. scabrum*, the leaves appear to vary from ovate-lanceolate to ovate in different plants, but the flowers are closely similar to those of *E. loxense*.

It therefore seems advisable to consider all of these concepts as representing a single variable species.

The habitat of *E. scabrum* was cited as "rocky mountains," that of *E. loxense* amid low thickets at 3000 to 3300 meters altitude, while *E. cardiophyllum* was said to grow in damp open woods mingled with shrubs at 2600 to 3000 meters altitude. A Peruvian collection (*Macbride 4887*) is cited as growing on a "wet rocky sphagnum slope," at about 2700 meters elevation.

The color of the flowers is given as sulphur yellow to clear yellow.

This species is found in Colombia, Ecuador (type of *E. loxense*) and Peru (type of *E. scabrum* and *E. cardiophyllum*).

**Epidendrum Scutella** *Lindley* in Bot. Reg. 30 (1844) Misc. p. 83; Fol. Orch. Epidendrum (1853) p. 49, no. 154.

*Epidendrum platyoon* Schlechter in Fedde Repert. Beih. 9 (1921) 91; ex Mansfeld in Fedde Repert. Beih. 57 (1929) t. 120, nr. 473.

A photograph of the type specimens of the Ecuadorian *Epidendrum Scutella* from the Lindley Herbarium at Kew shows that it includes *Weberbauer 4101* which Kränzlin determined as *E. Scutella* but which Schlechter made the type of the Peruvian *E. platyoon*. The only notable discrepancies between the concepts are that the leaves of *E. Scutella* appear to be acute or subacute rather than obtusely bilobed, the inflorescences seem to be 3- or 4-flowered rather than commonly 1-flowered and the lip appears to be subobtuse to acute rather than strongly obtuse.

This species occurs in Venezuela, Colombia, Ecuador (type) and Peru (type of *E. platyoon*).

**Epidendrum ventricosum** *Lindley* in Hooker Journ. Bot. 3 (1841) 86; Fol. Orch. Epidendrum (1853) p. 44, no. 137.

*Epidendrum pachygastrium* Kränzlin in Fedde Repert. 1 (1905) 183.

After a careful comparison of these concepts which are both represented in the Ames Herbarium by records of the type collections, it appears that they are conspecific. Indeed the only discrepancies seem to be that in *E. ventricosum* (represented by a pen drawing with floral analysis) the leaves are narrower than those of *E. pachygastrium* (exemplified by a photograph of the type and by a fragment of the type collection) and the calli at the base of the lip in *E. ventricosum* are shown as subglobose, while those of *E. pachygastrium* are described as rather long.

PERU: No locality, *Mathews 1869* (type); Department of Amazonas, Valley of the Utcabamba River south of Chachapoyas, at 3000 meters altitude, on branches of sclerophyllous vegetation, consisting mainly of bushes interspersed with trees, *A. Weberbauer 4298* (as *E. pachygastrium*).

**Bifrenaria** *Lindley*  
*Lindleyella* Schlechter

*Lindleyella*, a genus founded by Schlechter (Die Orchideen (1914) 414), is a segregate from *Bifrenaria* Lindl., based on *B. aurantiaca* Lindl. The reason for separating this generic concept from the variable genus *Bifrenaria* was claimed to be the presence of an elongate claw to the lip of this species, and the fact that the lateral lobes were abrupt and separated by a conspicuous callus.

It is a fact, however, that at least one species of true *Bifrenaria* (*B. sabulosa* Rodr.) has an equally elongate

lip-claw and lateral lobes nearly as abrupt as those in the concept *Lindleyella*. Furthermore, *Lindleyella aurantiaca* is the only species of that genus to conform with Schlechter's requirements. All of the other species so far referred to *Lindleyella* (*L. bicornaria* (Reichb.f.) Schltr., *L. floribunda* Schltr., *L. picta* Schltr. and *L. saxicola* Schltr.) have a short or very short claw to the lip, less abrupt lateral lobes and an additional callus near the claw. Finally, the concept *Lindleyella* shows the same short mentum exemplified by the type species of *Bifrenaria* (*B. atropurpurea* (Lodd.) Lindl.).

Therefore, since there is such a close vegetative similarity, as well as a general morphological agreement of the floral segments and even of pollinia, between these concepts and species of the genus *Bifrenaria*, I find it impossible to accept *Lindleyella* as a valid segregate.

In conformity with these views, the following transfers become necessary:

*Lindleyella floribunda* Schltr. (in Fedde Repert. Beih. 27 (1924) 84) = ***Bifrenaria floribunda*** (Schltr.) C. Schweinfurth comb. nov.

*Lindleyella picta* Schltr. (in Fedde Repert. Beih. 27 (1924) 173; ex Mansfeld in Fedde Repert. Beih. 58 (1930) t. 50, nr. 200) = ***Bifrenaria picta*** (Schltr.) C. Schweinfurth comb. nov.

*Lindleyella saxicola* Schltr. (in Fedde Repert. Beih. 27 (1924) 143) = ***Bifrenaria saxicola*** (Schltr.) C. Schweinfurth comb. nov.

In the Ames Herbarium (No. 26939), there is a specimen labelled *Lindleyella picta* Schltr. from near Buenaventura, Colombia, sent by C. W. Powell and determined by Dr. Schlechter. Since these data are cited under the type description, this collection may reasonably be considered to be an isotype. The flower is a close approxi-

mation to that of the type, as described and illustrated, except that the callus at the base of the lip is scarcely bilobulate as figured but appears to be a convex irregularly verrucose thickening. The lamina of the leaf is about 26 cm. long and 5.5 cm. wide, whereas the description postulates a leaf-blade 15 cm. long and almost 5 cm. wide.

A collection from Panama represents a closely similar but even larger plant than described for *Lindleyella picta*, being 45–60 cm. high according to the collectors' notes. The pseudobulb is only about 4 cm. high, instead of 5 cm. as specified. The lamina of the leaf is about 27 cm. long (nearly twice as long as the one typified) and is about 6.8 cm. wide; the petiole also is somewhat longer than described. The slightly larger flowers differ only in having a somewhat longer subquadrate lower portion of the lip and little narrower lateral lobes.

PANAMA: Province of Darien, Chepigana District, Cana-Cuasi Trail (Camp 1), at 800 feet altitude, March 18, 1940, *M.E. and R.A. Terry 1616* (Herb. Field Mus. No. 1034503).

*Lindleyella saxicola* was based on a Colombian specimen (Cundinamarca *A. Schultze 20*), but I have recently seen a collection from Peru (Loreto, *G. Klug 0.3*). The plants forming this latter collection, while showing some variability, have generally much larger vegetative dimensions than those attributed to the type, but the floral measurements are very similar. The roots are very stout (about 2–3 mm. thick), rather than "filiform"; the pseudobulbs are about 4 cm. high, as contrasted with 2–2.7 cm. high; the leaves, which are acute and not "acuminate," range from 18 to 30 cm. long, instead of "15–20 cm.," and reach a width of 6.6 cm., as contrasted with a maximum width of "6 cm.;" the petiole is elongate, ranging from 8 to 18 cm. long, instead of "3–3.5 cm.;" the inflorescence reaches about 55 cm. in length, con-

trasted with "up to 30 cm."; and the raceme is 19- to 22-flowered, instead of "8- to 12-flowered."

In another collection (Santander der Sur, Colombia, *Lavrance 850*) the vegetative portions are lacking, but the flowers are slightly smaller than typical, with narrower segments, rhombic-lanceolate petals and narrower lip with more cuneate claw.

***Lycaste macrophylla*** *Lindley* in *Bot. Reg.* 29 (1843) Misc. p. 14—*Ch. Morren* in *Ann. Soc. Bot. Gand.* 4 (1848) 373, t. 221—*Cogniaux* in *Martius Fl. Bras.* 3, pt. 5 (1902) 457.

*Maxillaria macrophylla* *Poeppig & Endlicher* *Nov. Gen. ac Sp.* 1 (1836) 37, t. 64—*Lindley* in *Bot. Reg.* 24 (1838) Misc. p. 92.

*Lycaste plana* *Lindley* in *Bot. Reg.* 28 (1842) Misc. p. 85; in *Bot. Reg.* 29 (1843) t. 35.

*Lycaste Filomenoi* *Schlechter* in *Fedde Repert. Beih.* 9 (1921) 100; ex *Mansfeld* in *Fedde Repert. Beih.* 57 (1929) t. 124, nr. 486.

Except for the concept *Lycaste Filomenoi*, reductions to synonymy have already been made.

*Lycaste Filomenoi*, which was described only from a flowering scape, appears to differ from the variable *L. macrophylla* only in having slightly smaller flowers with petals noticeably broader than the sepals. This character, while apparently not mentioned for *L. macrophylla*, is indicated in some of its illustrations and is seen in some specimens referred to *L. plana*.

This species has been recorded widely in northern South America—Venezuela, Colombia, Bolivia and especially Peru—and locally in Central America.